



- Vacuum filters VAF
- Filters ESF
- Angle compensators ESWA
- Height compensators VAL
- Elbows LJK
- Vacuum gauges VAM
- Silencers UO
- Valves for vacuum operation

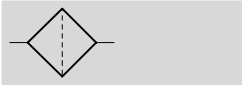
Accessories for vacuum technology

Technical data



Vacuum filters VAF

Function



- - Temperature range
0 ... +40 °C

- - Operating pressure
-0.9 ... 7 bar

This vacuum filter is used to remove particles in the direction of suction. It is used as an inline filter in the tubing line.



General technical data		PK-3	PK-4	PK-6
Size		PK-3	PK-4	PK-6
Design		Filter element in the translucent status		
Operating medium		Atmospheric air		
Mounting position		Any		
Type of mounting		In-line installation		
Vacuum port		PK-3 with locknut	PK-4 with locknut	PK-6 with locknut
Grade of filtration	[µm]	50		
Vacuum filter flow	[l/min]	-	70	210
Nominal size	[mm]	2	3	4.6
Operating pressure	[bar]	-0.9 ... 7		

Ambient conditions		PK-3	PK-4	PK-6
Size		PK-3	PK-4	PK-6
Ambient temperature	[°C]	0 ... +40		
Material		Plastic		

Weights [g]		PK-3	PK-4	PK-6
Size		PK-3	PK-4	PK-6
VAF- ...		4	6	9

Dimensions

- 1 Quick connectors for plastic tubing
- 2 Flow direction indicated with arrow
- 3 Degree of contamination visible through the transparent housing

Type	D1	D2	L1	≅C1
VAF-PK-3	16	12	50.8	8
VAF-PK-4	16	12	57	12
VAF-PK-6	23	16	63	14

Vacuum accessories

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Accessories for vacuum technology

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Technical data

Ordering data		
Pneumatic connection	Part No.	Type
PK-3	535 883	VAF-PK-3
PK-4	15 889	VAF-PK-4
PK-6	160 239	VAF-PK-6

Accessories for vacuum technology

Technical data

Filter ESF

Temperature range
0 ... +60 °C

Operating pressure
-0.95 ... 4 bar

Note
For suction gripper ESG, between
suction cup and suction cup holder
→ 6 / 2.1-5

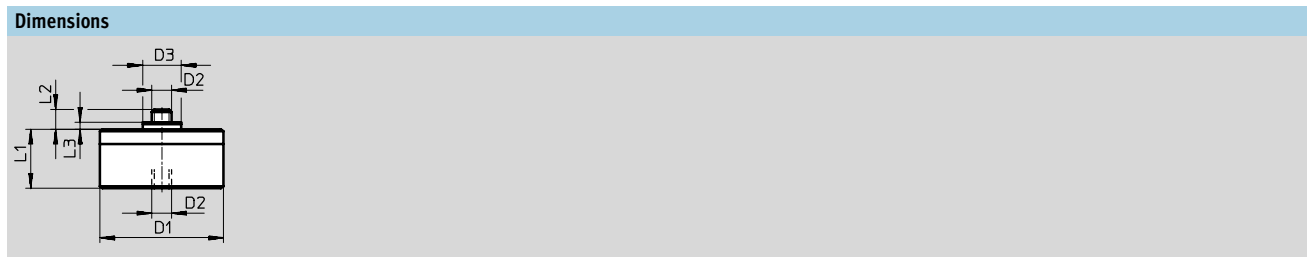


General technical data			
Holder size	3	4A	4B
Mounting position	Any		
Type of mounting	In-line installation with threaded connection		
Grade of filtration [µm]	10		
Flow rate [l/min]	100	260	270
Operating pressure [bar]	-0.95 ... 4		

Ambient conditions			
Holder size	3	4A	4B
Housing	Aluminium, nickel-plated brass		
Seals	Nitrile rubber		
Note on material	Free of copper, PTFE and silicone		
Ambient temperature [°C]	0 ... +60		
Corrosion resistance CRC ¹⁾	1		

1) Corrosion resistance class 1 according to Festo standard 940 070
Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

Weights [g]			
Holder size	3	4A	4B
ESF- ...	9	19	57



Type	D1 ∅	D2	D3 ∅	L1	L2	L3
ESF-3	25	M4x0.7	7.8	10.5	4.5	3.1
ESF-4A	25	M6x1	8.8	10.5	5.5	3.9
ESF-4B	40	M6x1	8.8	14	5.5	3.9

Ordering data		
Holder size	Part No.	Type
3	191 202	ESF-3
4A	191 203	ESF-4A
4B	191 204	ESF-4B

Vacuum accessories

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Accessories for vacuum technology

Technical data

Angle compensator ESWA

Temperature range
0 ... +60 °C

Note

For suction gripper ESG, between
suction cup and suction cup holder
→ 6 / 2.1-5



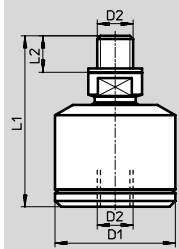
General technical data			
Holder size	3	4	5
Design	Ball joint with ± 15° swivel angle		
Operating medium	Atmospheric air		
Mounting position	Any		
Type of mounting	With threaded connection		

Ambient conditions			
Holder size	3	4	5
Housing	Aluminium		
Seals	Nitrile rubber		
Note on material	Free of copper, PTFE and silicone		
Ambient temperature [°C]	0 ... +60		
Corrosion resistance CRC ¹⁾	1		

1) Corrosion resistance class 1 according to Festo standard 940 070
Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

Weights [g]			
Holder size	3	4	5
ESWA- ...	9	19	57

Dimensions



Type	D1	D2	L1	L2
ESWA-3	15 Ø	M4x0.7	23	4
ESWA-4	20	M6x1	28.5	6
ESWA-5	28	M10x1.5	40.5	10

Ordering data		
Holder size	Part No.	Type
3	191 205	ESWA-3
4	191 206	ESWA-4
5	191 207	ESWA-5

Accessories for vacuum technology

Technical data



Height compensator VAL

Temperature range
-10 ... +60 °C

Note
For suction cup VAS/VASB
→ 6 / 2.1-76

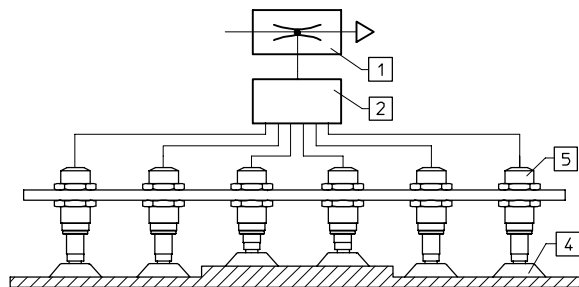


General technical data			
Size	5	10	20
Design	Vacuum port on top		
Operating medium	Atmospheric air		
Mounting position	Any		
Type of mounting	Mounting on the male thread or via the female air connection thread of the housing		
Vacuum port	M5	G1/8	G1/4
Operating pressure [bar]	-0.95 ... 8		

Ambient conditions			
Size	5	10	20
Housing	Aluminium		
Seals	Nitrile rubber		
Note on material	Free of copper, PTFE and silicone		
Ambient temperature [°C]	-10 ... +60		

Gentle handling of the workpieces by compensating for any excess stroke of the handling device or tolerance differences in the workpiece thickness.

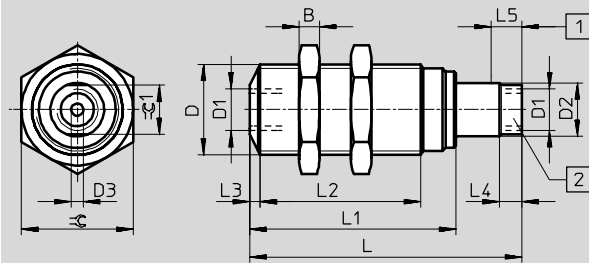
- 1 Vacuum generator
- 2 Distributor
- 4 Suction cup
- 5 Height compensator



Accessories for vacuum technology

Technical data

Dimensions



- 1) Spring travel for height compensator
2) Suction cup connector

Type	B	D	D1	D2 ∅	D3 ∅	L	L1	L2	L3	L4	L5	⊕	⊖ 1
VAL-M5-5	5	M16x1	M5	8	2	46	35	25.5	2	4.5	5	19	7
VAL-1/8-10	6	M22x1.5	G1/8	13	3	66	50	39	2.5	5.5	10	27	12
VAL-1/4-20	8	M26x1.5	G1/4	17	4	100	73	60	2.5	6.5	20	32	16

Ordering data

Height compensator [mm]	Vacuum port	Part No.	Type
5	M5	151 209	VAL-M5-5 ¹⁾
10	G1/8	151 210	VAL-1/8-10 ¹⁾
20	G1/4	151 211	VAL-1/4-20 ¹⁾

1) Free of copper, PTFE and silicone

Accessories for vacuum technology

Technical data



Elbow fitting LJK

Temperature range
-10 ... +60 °C

Operating pressure
-0.95 ... 8 bar

Note
For suction cup VAS/VASB
→ 6 / 2.1-76

- Redirection of air connection
- Swivel joint rotatable 360°
- For decoupling from mounting thread



General technical data			
Size	M5	G1/8	G1/4
Design	Swivel fitting with female thread		
Operating medium	Atmospheric air		
Mounting position	Any		
Type of mounting	Mounting via the lateral connection nection on the male thread of the hollow bolt		
Vacuum port	M5	G1/8	G1/4
Operating pressure [bar]	-0.95 ... 8		

Ambient conditions			
Size	M5	G1/8	G1/4
Swivel fitting	Die-cast zinc		
Seals	Nitrile rubber and steel/nitrile rubber		
Note on material	Free of copper, PTFE and silicone		
Ambient temperature [°C]	-10 ... +60		
Corrosion resistance CRC ¹⁾	2		

1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents.

Dimensions

1 Air connection (vacuum)
2 Mounting thread

Vacuum port	B	D	H	H1	H2	L	L1	⌀
M5	10	M5	20.3	3.8	7.5	17.5	12.5	8
G1/8	16	G1/8	30	5	10.6	28	20	13
G1/4	20	G1/4	39	8	13.5	36	26.5	17

Ordering data		
Vacuum port	Part No.	Type
M5	151 783	LJK-M5-I/I
G1/8	151 784	LJK-1/8-I/I
G1/4	151 785	LJK-1/4-I/I


Accessories for vacuum technology


Technical data

Vacuum gauge VAM, DIN EN 837-1

Function



 Temperature range
-10 ... +60 °C

 Pressure
-1 ... +9 bar

- Analogue display via Bourdon tube
- Vacuum gauges can be loaded up to $\frac{3}{4}$ of their full scale value under static load and up to $\frac{2}{3}$ under intermittent load conditions.



General technical data			
Nominal tubing size, pressure gauge	40	63	
Type	VAM-40-V1/0	VAM-63-V1/0	VAM-63-V1/9
Pneumatic connection	R1/8	R1/4	
Operating pressure [bar]	-1 ... 0	-1 ... 0	-1 ... +9
Operating medium	Dried air, lubricated or unlubricated		
Design	Bourdon tube pressure gauge		
Based on standard	DIN EN 837-1		
Type of mounting	Can be screwed in Panel mounting		
Type of seal on threaded plug	No seal		
Mounting position	Any		
Connection position	Centre, rear side		
Ambient temperature [°C]	-10 ... +60		
Accuracy of measurement, class	2.5		
Factor, continuous load	0.75		
Factor, intermittent load	0.66		

Display			
Nominal tubing size, pressure gauge	40	63	
Type	VAM-40-V1/0	VAM-63-V1/0	VAM-63-V1/9
Scale	Double scale bar (outer) inHg/psi (inner)		
Indicating range [bar]	-1 ... 0	-1 ... 0	-1 ... +9
[inHg]	-30 ... 0	-30 ... 0	-30 ... 0
[psi]	-	-	0 ... +130

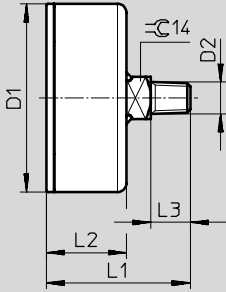
Product weights [g]			
Nominal tubing size, pressure gauge	40	63	
VAM	63	83	

Materials	
Housing	Acrylic butadiene styrene
Window shield	Polystyrene
Threaded plug	Brass

Accessories for vacuum technology

Technical data

Dimensions



Type	D1 ∅	D2	L1	L2	L3
VAM-40	39 ±0.5	R $\frac{1}{8}$	46 ±1	26 ±0.5	12
VAM-63	62 ±0.5	R $\frac{1}{4}$	47.5 ±1	26.5 ±0.5	13

Ordering data

Nominal tubing size, pressure gauge	Pneumatic connection	Indicating range			Part No.	Type
		[bar]	[inHg]	[psi]		
40	R $\frac{1}{8}$	-1 ... 0	-30 ... 0	-	537 810	VAM-40-V1/0-R $\frac{1}{8}$ -EN
63	R $\frac{1}{4}$	-1 ... 0	-30 ... 0	-	537 811	VAM-63-V1/0-R $\frac{1}{4}$ -EN
		-1 ... 9	-30 ... 0	0 ... +130	537 814	VAM-63-V1/9-R $\frac{1}{4}$ -EN

- 1 - Type to be discontinued
Available up to 2005

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Accessories for vacuum technology


Technical data

Vacuum gauge VAM

Function



-  - Temperature range
 -10 ... +60 °C

-  - Pressure
 -1 ... +9 bar

- Analogue display via Bourdon tube
- Vacuum gauges can be loaded up to $\frac{3}{4}$ of their full scale value under static load and up to $\frac{2}{3}$ under intermittent load conditions.



General technical data			
Nominal tubing size, pressure gauge	40	63	
Type	VAM-40-V1/0	VAM-63-V1/0	VAM-63-V1/9
Pneumatic connection	G $\frac{1}{8}$	G $\frac{1}{4}$	G $\frac{1}{4}$
Operating pressure [bar]	-1 ... 0	-1 ... 0	-1 ... +9
Operating medium	Compressed air, filtered, lubricated or unlubricated		
Design	Bourdon tube pressure gauge		
Mounting position	Upright		
Type of mounting	Can be screwed in		
Connection position	Centre, rear side		
Ambient temperature [°C]	-10 ... +60		
Corrosion resistance classification CRC ¹⁾	1		
Accuracy of measurement, class	1.6		


1) Corrosion resistance class 1 according to Festo standard 940 070
 Components requiring low corrosion resistance. Transport and storage protection. Parts that do not have primarily decorative surface requirements, e.g. in internal areas that are not visible or behind covers.

Display			
Nominal tubing size, pressure gauge	40	63	
Type	VAM-40-V1/0	VAM-63-V1/0	VAM-63-V1/9
Scale	Double scale		
	bar (outer)		
	psi (inner)		
Indicating range [bar]	-1 ... 0	-1 ... 0	-1 ... +9
[psi]	-14.5 ... 0	-14.5 ... 0	-14.5 ... +130.5

Product weights [g]		
Nominal tubing size, pressure gauge	40	63
VAM	110	130

Vacuum accessories

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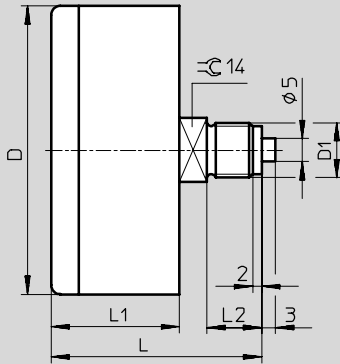
 Type to be discontinued
Available up to 2005

Accessories for vacuum technology

Technical data




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Dimensions



Type	D ∅	D1	L	L1	L2
VAM-40	40	G $\frac{1}{8}$	40.5	24.5	10
VAM-63	63	G $\frac{1}{4}$	46	28	12

Ordering data

Nominal tubing size, pressure gauge	Pneumatic connection	Indicating range		Part No.	Type
		[bar]	[psi]		
40	G $\frac{1}{8}$	-1 ... 0	-14.5 ... 0	13 777	VAM-40-V1/0- $\frac{1}{8}$  Type Discontinued
63	G $\frac{1}{4}$	-1 ... 0	-14.5 ... 0	13 574	VAM-63-V1/0- $\frac{1}{4}$  Type Discontinued
		-1 ... +9	-14.5 ... +130.5	13 575	VAM-63-V1/9- $\frac{1}{4}$  Type Discontinued
Free of copper, PTFE and silicone					
40	G $\frac{1}{8}$	-1 ... 0	-14.5 ... 0	183 521	VAM-40-V1/0- $\frac{1}{8}$ -CT
63	G $\frac{1}{4}$	-1 ... 0	-14.5 ... 0	183 522	VAM-63-V1/0- $\frac{1}{4}$ -CT


Accessories for vacuum technology


Technical data

Vacuum gauge FVAM, DIN EN 837-1

Function



 Temperature range
-10 ... +60 °C

 Pressure
-1 ... 0 bar

- Analogue display via Bourdon tube
- Vacuum gauges can be loaded up to $\frac{3}{4}$ of their full scale value under static load and up to $\frac{2}{3}$ under intermittent load conditions.



General technical data		
Nominal tubing size, pressure gauge	40	63
Pneumatic connection	G $\frac{1}{8}$	G $\frac{1}{4}$
Operating pressure [bar]	-1 ... 0	-1 ... 0
Operating medium	Dried air, lubricated or unlubricated	
Design	Bourdon tube pressure gauge	
Based on standard	DIN EN 837-1	
Type of mounting	Can be screwed in Panel mounting	
Type of seal on threaded plug	No seal	
Mounting position	Any	
Connection position	Centre, rear side	
Ambient temperature [°C]	-10 ... +60	
Accuracy of measurement, class	2.5	
Factor, continuous load	0.75	
Factor, intermittent load	0.66	

Display		
Nominal tubing size, pressure gauge	40	63
Scale	Double scale bar (outer) inHg/psi (inner)	
Indicating range [bar]	-1 ... 0	-1 ... 0
[inHg]	-30 ... 0	-30 ... 0

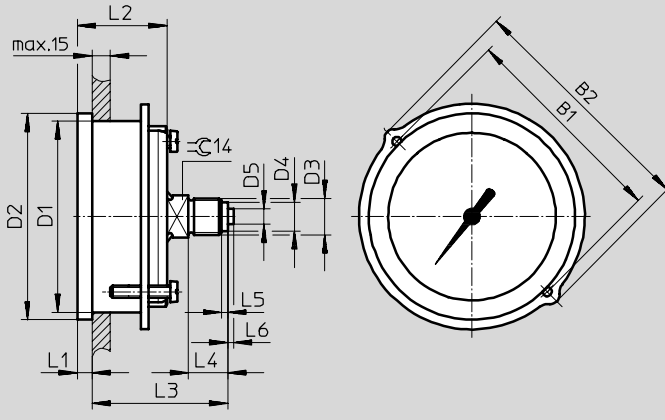
Product weights [g]		
Nominal tubing size, pressure gauge	40	63
FVAM	81	121

Materials	
Housing	Acrylic butadiene styrene
Window shield	Polymethylmethacrylate
Threaded plug	Brass

Accessories for vacuum technology

Technical data

Dimensions



Type	B1	B2	D1 Ø	D2 Ø	D3	D4 Ø	D5 Ø	L1	L2	L3	L4	L5	L6
FVAM-40	48	56	40	45	G $\frac{1}{8}$	8	–	4.5	26.5	40	10	2	–
FVAM-63	70	79	63	68	G $\frac{1}{4}$	9.5	5	4.8	29.5	42.5	13	2	2

Ordering data

Nominal tubing size, pressure gauge	Pneumatic connection	Indicating range		Part No.	Type
		[bar]	[inHg]		
40	G $\frac{1}{8}$	-1 ... 0	-30 ... 0	537 812	FVAM-40-V1/0-G $\frac{1}{8}$ -EN
63	G $\frac{1}{4}$	-1 ... 0	-30 ... 0	537 813	FVAM-63-V1/0-G $\frac{1}{4}$ -EN


Accessories for vacuum technology


Technical data


Silencer UO

Function



-  - Temperature range
-10 ... +60 °C

-  - Operating pressure
0 ... 8 bar

-  - Note
For vacuum generators VN.
Further silencers → 6 / 4.1-18

- Special silencer with outlet
- Facilitates trouble-free operation of the vacuum generator



General technical data			
Size	M7	G1/8	G1/4
Design	Silencer		
Operating medium	Compressed air, dried		
Mounting position	Any		
Mounting	Threaded connection		
Pneumatic connection	M7	G1/8	G1/4
Operating pressure [bar]	0 ... 8		

Ambient conditions			
Size	M7	G1/8	G1/4
Threaded plug	Polyethylene		
Silencer insert	Ultra-high molecular polyethylene		
Note on material	Free of copper, PTFE and silicone		
Ambient temperature [°C]	-10 ... +60		
Corrosion resistance CRC ¹⁾	2		

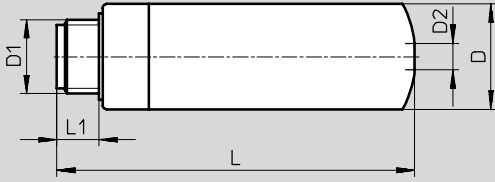
1) Corrosion resistance class 2 according to Festo standard 940 070
Components requiring moderate corrosion resistance. Externally visible parts with primarily decorative surface requirements which are in direct contact with a surrounding industrial atmosphere or media such as cooling or lubricating agents.

Weights [g]			
Size	M7	G1/8	G1/4
UO...	2.5	5	8

Accessories for vacuum technology

Technical data

Dimensions



Connection	D ∅	D1	D2	L	L1
M7	9.8	M7	3	36.7	5.5
G ¹ / ₈	13.8	G ¹ / ₈	3.5	48	6.5
G ¹ / ₄	17.8	G ¹ / ₄	5.3	62.3	8.5

Ordering data


Pneumatic connection	Part No.	Type
M7	197 582	UO-M7
G ¹ / ₈	197 583	UO-1/8
G ¹ / ₄	197 584	UO-1/4

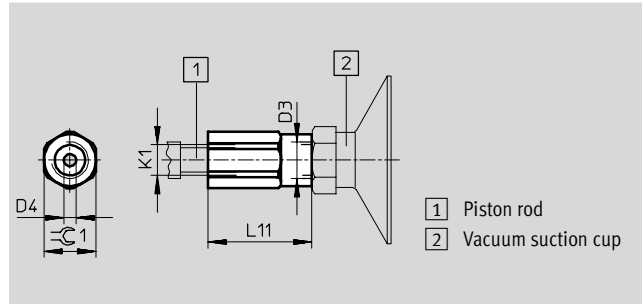
Accessories for vacuum technology

Accessories

Adapter AD


For connection of suction cup with piston rod thread, for example

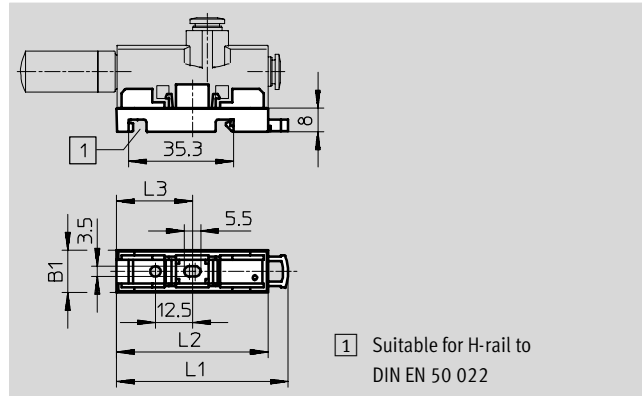
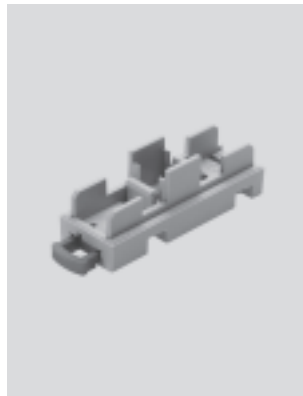
-  - Note
For suction cup VAS/VASB
→ 6 / 2.1-76



Ordering data							
Connection	D3	D4 ∅	K1	L11	\approx 1	Part No.	Type
M6-M5	M5	2.3	M6	27	10	157 328	AD-M6-M5
M6-G $\frac{1}{8}$	G $\frac{1}{8}$	2.3	M6	27	13	157 329	AD-M6- $\frac{1}{8}$
M6-G $\frac{1}{4}$	G $\frac{1}{4}$	2.3	M6	30	17	157 330	AD-M6- $\frac{1}{4}$
M8-G $\frac{1}{8}$	G $\frac{1}{8}$	3.2	M8	29	13	157 331	AD-M8- $\frac{1}{8}$
M8-G $\frac{1}{4}$	G $\frac{1}{4}$	3.2	M8	32	17	157 332	AD-M8- $\frac{1}{4}$
M10-G $\frac{1}{8}$	G $\frac{1}{8}$	4	M10x1.25	31	13	157 333	AD-M10x1,25- $\frac{1}{8}$
M10-G $\frac{1}{4}$	G $\frac{1}{4}$	4	M10x1.25	34	17	157 334	AD-M10x1,25- $\frac{1}{4}$
M12-G $\frac{1}{4}$	G $\frac{1}{4}$	6	M12x1.25	34	17	160 256	AD-M12x1,25- $\frac{1}{4}$
M12-G $\frac{3}{8}$	G $\frac{3}{8}$	6	M12x1.25	37	22	160 257	AD-M12x1,25- $\frac{3}{8}$

Mounting plate VN

-  - Note
For vacuum generator VN
→ 6 / 1.1-9



Ordering data							
Width [mm]	B1	L1	L2	L3	Part No.	Type	
10	10.4	56.5	51	25.5	196 951	VN-T2-BP-NRH	
14	14.4	57.9	51.2	25.6	193 641	VN-T3-BP-NRH	
18	18.4	57.9	51.2	25.6	195 279	VN-T4-BP-NRH	

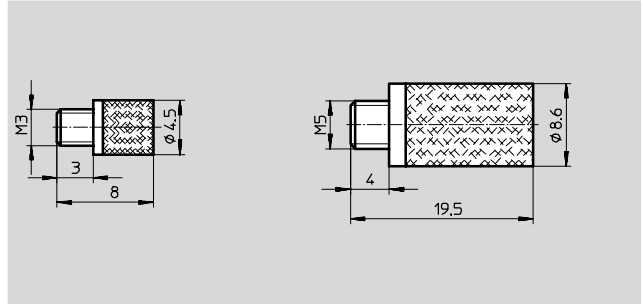
Accessories for vacuum technology

Accessories



Silencer U

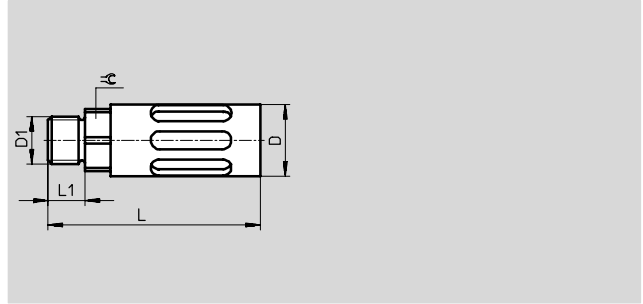
Material:
Sintered bronze



Ordering data							
Connection	Weight [g]	Part No.	Type				
M5	5	4 645	U-M5				

Silencer U...-B

Material:
Die-cast metal

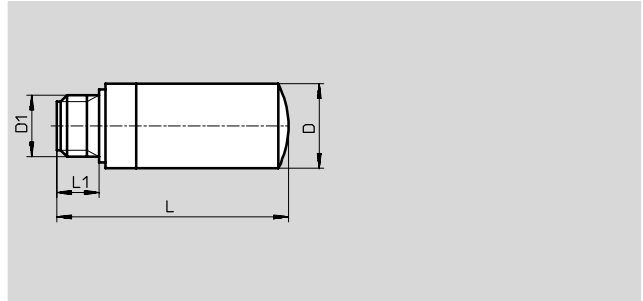


Ordering data							
Connection	D Ø	D1	L	L1	⌀	Part No.	Type
G $\frac{1}{8}$	16	G $\frac{1}{8}$	39.2	5.5	14	6 841	U- $\frac{1}{8}$ -B ¹⁾
G $\frac{1}{4}$	19.5	G $\frac{1}{4}$	55.6	6.5	17	6 842	U- $\frac{1}{4}$ -B ¹⁾
G $\frac{3}{8}$	25	G $\frac{3}{8}$	86.6	7.5	19	6 843	U- $\frac{3}{8}$ -B ¹⁾

1) Free of copper, PTFE and silicone

Silencer UC

Material:
Polyethylene



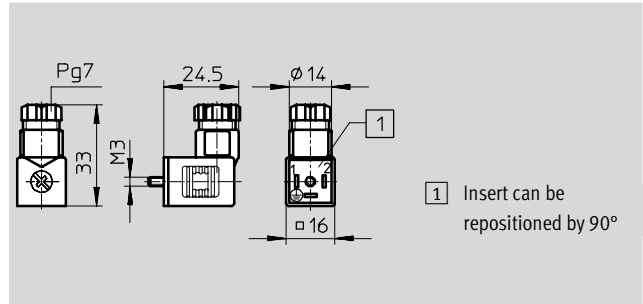
Ordering data							
Connection	D Ø	D1	L	L1	Part No.	Type	
G $\frac{1}{8}$	13.8	G $\frac{1}{8}$	38.0	6.5	161 419	UC- $\frac{1}{8}$	
G $\frac{1}{4}$	17.8	G $\frac{1}{4}$	51.0	8.5	165 004	UC- $\frac{1}{4}$	

Core Range

Accessories for vacuum technology

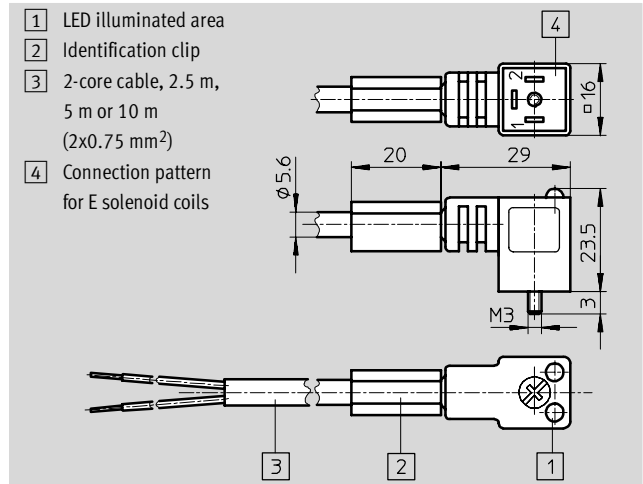
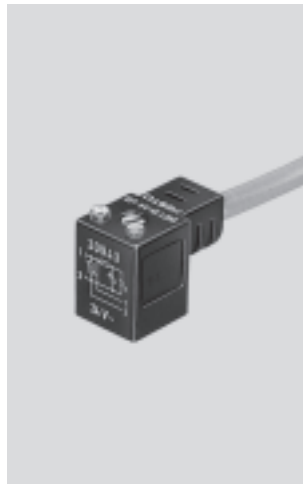
Accessories

Plug socket MSSD-E
for solenoid coil ME



Ordering data		Part No.	Type
Plug socket		14 098	MSSD-E

Plug socket with cable KME-...
for solenoid coil ME



Ordering data		Part No.	Type
Length [m]	Voltage [V DC]		
2.5	24	30 943	KME-1-24DC-2,5-LED
5	24	30 945	KME-1-24DC-5-LED
10	24	193 455	KME-1-24DC-10-LED

Illuminating seal ME-...
for solenoid coil ME



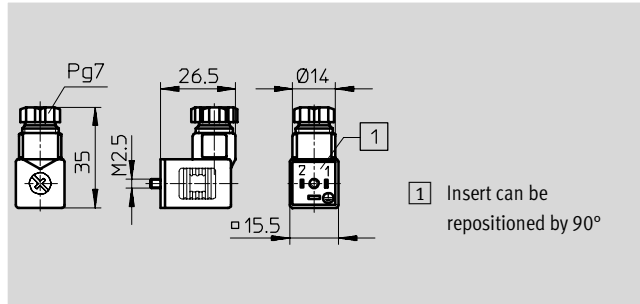
Ordering data		Part No.	Type
Voltage [V DC]			
24		19 141	ME-LD-12-24DC

Accessories for vacuum technology

Accessories

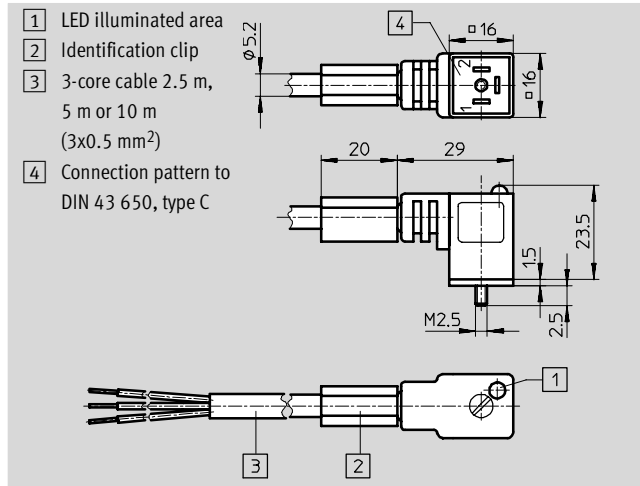


Plug socket MSSD-EB
for solenoid coil MEB



Ordering data		Part No.	Type
Plug socket		151 687	MSSD-EB

Plug socket with cable KMEB-...
for solenoid coil MEB



Ordering data		Part No.	Type
Length [m]	Voltage [V DC]		
2.5	24	151 688	KMEB-1-24DC-2,5-LED
5.0	24	151 689	KMEB-1-24DC-5-LED
10.0	24	193 457	KMEB-1-24DC-10-LED

Illuminating seal MEB-...
for solenoid coil MEB



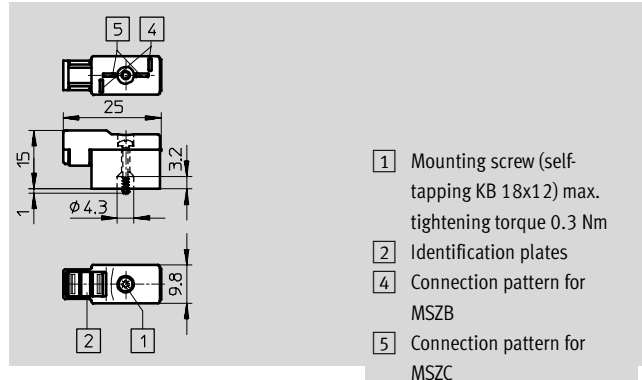
Ordering data		Part No.	Type
Voltage [V DC]			
24		151 717	MEB-LD-12-24DC

Core Range

Accessories for vacuum technology

Accessories

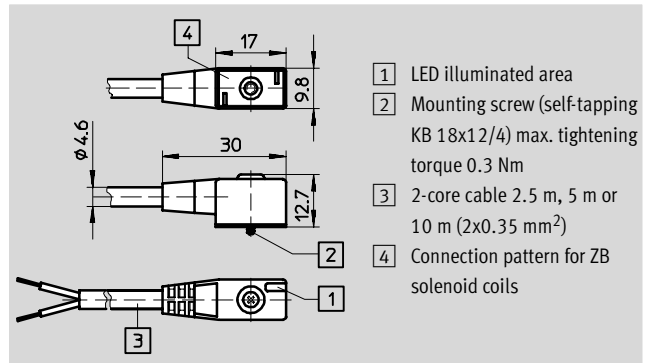
Plug socket MSSD-ZBZC
for solenoid coils MZB, MYB



- 1 Mounting screw (self-tapping KB 18x12) max. tightening torque 0.3 Nm
- 2 Identification plates
- 4 Connection pattern for MSZB
- 5 Connection pattern for MSZC

Ordering data		Part No.	Type
Plug socket		185 521	MSSD-ZBZC

Plug socket with cable KMYZ-...-LED
for solenoid coils MZB, MYB



- 1 LED illuminated area
- 2 Mounting screw (self-tapping KB 18x12/4) max. tightening torque 0.3 Nm
- 3 2-core cable 2.5 m, 5 m or 10 m (2x0.35 mm²)
- 4 Connection pattern for ZB solenoid coils

Ordering data		Part No.	Type
Length [m]			
2.5		34 997	KMYZ-2-24-2,5-LED
5.0		34 998	KMYZ-2-24-5-LED
10.0		193 443	KMYZ-2-24-10-LED

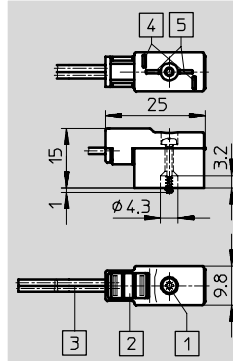
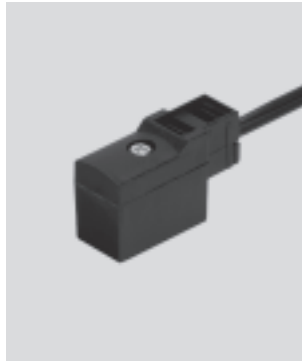
Core Range

Accessories for vacuum technology

Accessories



Plug socket with cable KMYZ-...
for solenoid coils MZB, MYB

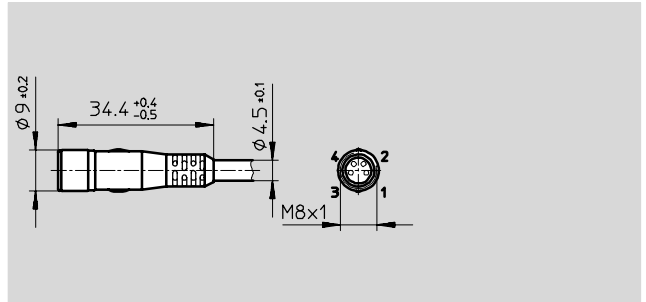
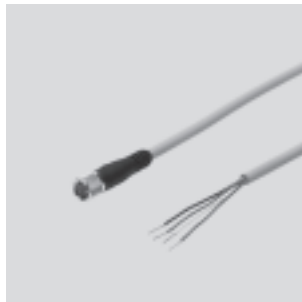


- 1 Mounting screw (self-tapping KB 18x12) max. tightening torque 0.3 Nm
- 2 Identification plates
- 3 2-core cable 0.5 m or 2.5 m (1x0.35 mm², 1x0.34 mm²)
- 4 Connection pattern for MSZB
- 5 Connection pattern for MSZC

Ordering data		
Length [m]	Part No.	Type
0.5	185 519	KMYZ-4-24-0,5
2.5	185 520	KMYZ-4-24-2,5

Plug socket with cable SIM
M8, 4-pin
straight socket

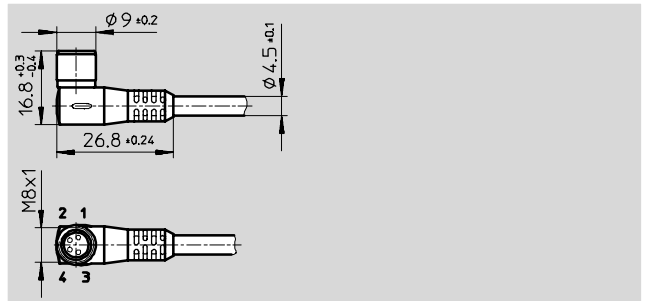
Material:
Polyurethane



Ordering data		
Length [m]	Part No.	Type
2.5	158 960	SIM-M8-4GD-2,5-PU
5	158 961	SIM-M8-4GD-5-PU

Plug socket with cable SIM
M8, 4-pin
angled socket

Material:
Polyurethane



Ordering data		
Length [m]	Part No.	Type
2.5	158 962	SIM-M8-4WD-2,5-PU
5	158 963	SIM-M8-4WD-5-PU

Core Range

Accessories for vacuum technology

Accessories

Valves suitable for vacuum

In contrast to the vacuum generator, the vacuum pump is an instrument for central vacuum generation that evacuates the entire network and does not create a vacuum directly on an installation – as is the case with the generator. From this network – or the

connected reservoirs – tubing is connected, which draws the vacuum. This requires the use of valves or valve terminals suitable for vacuum, which have a short response time in order to be able to achieve the shortest

possible evacuation times despite remote vacuum generation. The most important characteristic of these valves is their nominal size, as it determines the maximum suction rate and therefore the evacuation time.

The evacuation times to be achieved are also derived from the laval nozzle diameter of the vacuum generator. The evacuation time is thus the connection between the nominal valve size and laval nozzle diameter.

For vacuum generators with high vacuum ...

- Vacuum generator VN
- Vacuum generator VADM/VADMI
- Vacuum generator VAD
- Vacuum generator VAD-M

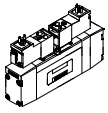
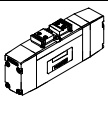
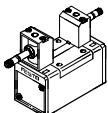
For vacuum generators with high suction rate ...

- Vacuum generator VN

... the following rules of thumb apply:

$$\frac{\text{Valve nom. size}}{3} = \text{Laval nozzle dia.}$$

$$\frac{\text{Valve nom. size}}{4} = \text{Laval nozzle dia.}$$

Standard directional control valves							→ Volume 2
	ISO size	Pneumatic connection	Nominal size [mm]	Response time [ms]		Function	Type
				On	Off		
Solenoid valves, ISO 15407-1							
	02	G1/8	6	18 ... 23	27 ... 34	5/2-way valve	MN2H-5/2-...-02-S
				16	16		JMN2H-5/2-...-02-S
	01	G1/4	8	24 ... 31	43 ... 58		MN2H-5/2-...-01-S
				16 ... 18	18		JMN2H-5/2-...-01-S
Pneumatic valves, ISO 15407-1							
	02	G1/8	6	8 ... 9	18	5/3-way valve	VL-5/3G-...-02
				6	6	5/2-way valve	J-5/2-...-02
				6	6		JD-5/2-...-02
	01	G1/4	8	13	32 ... 38	5/3-way valve	VL-5/3-...-01
				10	10	5/2-way valve	J-5/2-...-01
				9	9		JD-5/2-...-01
Solenoid valves, ISO 5599-1							
	1	G1/4	8	16 ... 23	35 ... 45	5/2-way valve	MFH-...-S-C
				16	16	5/3-way valve	JMFH-...-S-C
				17...23	32 ... 39		MN1H-...-S-C
				18	18		JMN1H-...-S-C
	2	G3/8	11.5	27 ... 48	71 ... 73		MFH-...-S-C
				18	18		JMFH-...-S-C
				24 ... 46	62 ... 69		MN1H-...-S-C
				21	21		JMN1H-...-S-C
	3	G1/2	14.5	30 ... 60	66 ... 82		MFH-...-S-C
				18	18		JMFH-...-S-C
				33 ... 49	71 ... 74		MN1H-...-S-C
				21	21		JMN1H-...-S-C

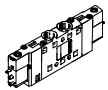
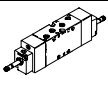
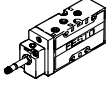
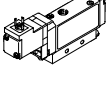
Accessories for vacuum technology

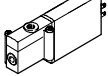
Accessories

FESTO

Vacuum accessories

4.1

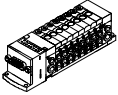
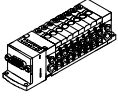
Directional control valves for general applications						→Volume 2
	Pneumatic connection	Nominal size [mm]	Response time [ms]		Function	Type
			On	Off		
Solenoid valves CPE, Compact Performance						
	M5, M7, G1/8, G1/4, G3/8, push-in connector 4, 6, 8, 10, 12 mm	6	12 ... 27	12 ... 42	3/2-way valve	CPE14-...-S
		8	13 ... 28	13 ... 38	5/2-way valve	CPE18-...-S
		11	25 ... 50	25 ... 55	5/3-way valve	CPE24-...-S
Solenoid valves, Tiger 2000						
	G1/8	8	10 ... 24	12 ... 30	5/2-way valve	JMFH-...-S-B
			18 ... 30	18 ... 36	5/3-way valve	JMVH-...-S-B
	G1/4	10	14 ... 34	14 ... 44		JMFH-...-S-B
			16 ... 33	16 ... 40		JMVH-...-S-B
	G3/8	12	14 ... 36	14 ... 82		JMFH-...-S-B
			17 ... 32	17 ... 88		JMVH-...-S-B
Solenoid valves, Tiger Classic						
	G1/8	5	9	29	3/2-way valve	MFH-3-...-S
			4	10	5/2-way valve	VL/O-3-...-B
	G1/4	7	10	29		MFH-3-...-S
			8	30		VL/O-3-...-B
	G1/2	14	18	90		MFH-3-...-S
			17	30		VL/O-3-...-B
	G3/4	19	40	29		MFH-3-...-S
			23	23		VL/O-3-...-B
Solenoid valves, midi pneumatics						
	G1/8	5	10 ... 15	18 ... 28	3/2-way valve	MEBH-5/2-...
			10	10	5/2-way valve	JMEBH-5/2-...
			12	25	5/3-way valve	MEBH-5/3-...
			10 ... 15	18 ... 28		MEH-5/2-...
			10	10		JMEH-5/2-...
			12	25		MEH-5/3-...

Application-optimised directional control valves						→Volume 2
	Pneumatic connection	Nominal size [mm]	Response time [ms]		Function	Type
			On	Off		
Solenoid valves MH2, MH3, fast switching valves						
	M5, M7, QS4	2	2 ... 7	2 ... 7	3/2-way valve	MHE/P/A2-...
	G1/8, QS6	3				MHE/P/A3-...

Accessories for vacuum technology

Accessories

FESTO

Application-optimised valve terminals						→Volume 4
	Pneumatic connection	Nominal size [mm]	Response time [ms]		Function	Type
			On	Off		
Valve terminal type 82 CPASC1, Smart Cubic						
	M5, push-in connectors 3, 4 mm	2.5	10	25	2/2-way valve	CPASC1-M1H-B-...
			10	25	3/2-way valve	CPASC1-M1H-G-...
			10	25	5/2-way valve	CPASC1-M1H-E-...
			10	20	5/3-way valve	CPASC1-M1H-X-...
Valve terminal type 80 CPVSC1, Smart Cubic						
	M5, push-in connectors 3, 4 mm	2.5	10	10	2/2-way valve	CPVSC1-M1H-D-P
					3/2-way valve	CPVSC1-M1H-M-P
					5/2-way valve	CPVSC1-M1H-J-P
						CPVSC1-M1H-N-P
					CPVSC1-M1H-K-P	

Accessories for vacuum technology











Accessories

FESTO

Modern connection technology

Festo offers a broad spectrum of tubing accessories in nominal sizes ranging from 2 ... 28 mm.

The range of accessories from Festo assures clear-cut control system layouts and easy assembly.

Product overview	Brief description	→ Volume 3
Pipes		
	<ul style="list-style-type: none"> ■ Plastic pipes ■ Metal pipes 	
Tubing		
	<ul style="list-style-type: none"> ■ Standard O.D., standard I.D. ■ Operating medium: Compressed air, water, vacuum ■ Variants: Temperature and chemical resistant, hydrolysis resistant, suitable for foodstuffs 	
Spiral tubing		
	<ul style="list-style-type: none"> ■ Standard O.D. ■ Operating medium: Compressed air, water, vacuum ■ Materials: Polyamide, polyurethane 	
Push-in fittings		
	<ul style="list-style-type: none"> ■ Threaded connection: Metric thread, G thread, R thread ■ Suitable for vacuum ■ Variants: Metal, stainless steel, flame retardant, antistatic 	
Plugs/couplings		
	<ul style="list-style-type: none"> ■ Threaded connection: Metric thread, G thread ■ Self-sealing, shut-off on one side, safety coupling ■ Variants: Male thread, female thread 	
Distributors		
	<ul style="list-style-type: none"> ■ Connection sizes: M3 ... G½ 	
Tubing cutters		
	<ul style="list-style-type: none"> ■ Pipe and tubing cutters 	
Protective conduits		
	<ul style="list-style-type: none"> ■ Flexible, separable, fittings, adapters, connectors, distributors 	
Air reservoirs		
	<ul style="list-style-type: none"> ■ EC directive 87/404 ■ Variants: Stainless steel 	
Air guns		
	<ul style="list-style-type: none"> ■ Variant: Air-saving function 	